Montana Driver Education and Training

Strategies for Drowsy Driving

Standards and Benchmarks

1. **Laws and Highway System**
   a. know proper visual skills for operating a motor vehicle
   b. communicate and explain proper visual skills for operating a motor vehicle
   c. consistently demonstrate knowledge and understanding by responsible adherence to highway transportation system traffic laws and control devices
2. **Responsibility**
   a. recognize the importance of making safe and responsible decisions for owning and operating a vehicle
   b. demonstrate the ability to make appropriate decisions while operating a motor vehicle
   c. consistently display respect for other users of the highway transportation system
   d. develop habits and attitudes with regard to responsible driving
3. **Visual Skills**
   d. develop habits and attitudes with regard to proper visual skills
4. **Vehicle Control**
   b. develop habits and attitudes relative to safe, efficient and smooth vehicle operation.
5. **Communication**
   a. consistently communicate their driving intentions (i.e., use of lights, vehicle and personal signals)
   b. adjust their driver behavior based on observation of highway transportation system and other users
   c. adjust communication (i.e., use of lights, vehicle and personal signals) based on observation of highway transportation system and other users
   d. develop habits and attitudes relative to effective communication
6. **Risk Management**
   a. understand driver risk-management principles
   b. demonstrate driver risk-management strategies
   c. develop driver risk-management habits and attitudes
7. **Lifelong Learning**
   a. understand past, present and future vehicle and roadway design, and driving cultures
   b. describe past, present and future motor vehicle laws
   c. understand benefits of a lifelong learning approach to driving
   e. identify opportunities for lifelong education in driving

What is Fatigue?

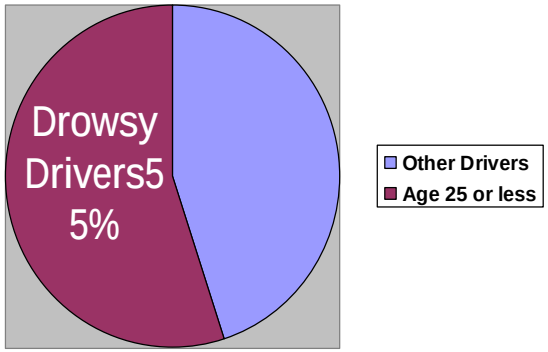
- Fatigue is a body's response to extended mental or physical activities can result from physical labor as well as repetitive activities such as monitoring a display screen or driving a truck long distances
- An individual can be fatigued without being sleepy, but conditions that produce fatigue also expose underlying sleepiness

Daytime Sleepiness

- Excessive daytime sleepiness is a condition in which an individual feels very drowsy during the day and has an urge to fall asleep
- Daytime sleepiness can be dangerous and puts a person at risk for drowsy driving

Fatigue and Driving Performance

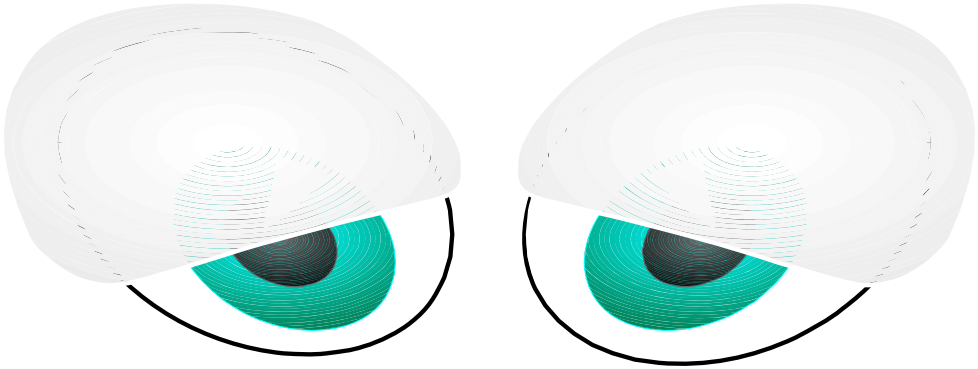
- Drowsy drivers are a hazard
- 100,000 crashes each year are caused by fatigued drivers
- 55% of drowsy driving crashes are caused by drivers less than 25 years old
- Being awake for 18 hours is equal to a blood alcohol concentration (BAC) of 0.08%, which is legally drunk and leaves you at equal risk for a crash



18 hours awake = 0.08 BAC

Effects of Sleepiness and Fatigue are Very Much the Same

Studies have linked sleepiness and fatigue to decreases in vigilance, reaction time, memory, psychomotor coordination, information processing, and decision making



The Effect of Sleepiness on Driving

- Progressive withdrawal of attention from the road and traffic demands causes auto crashes because it impairs performance and can ultimately lead to the inability to resist falling asleep at the wheel
- The ultimate impairment is falling asleep at the wheel

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OPI Linda McCulloch, Superintendent
Montana Office of Public Instruction
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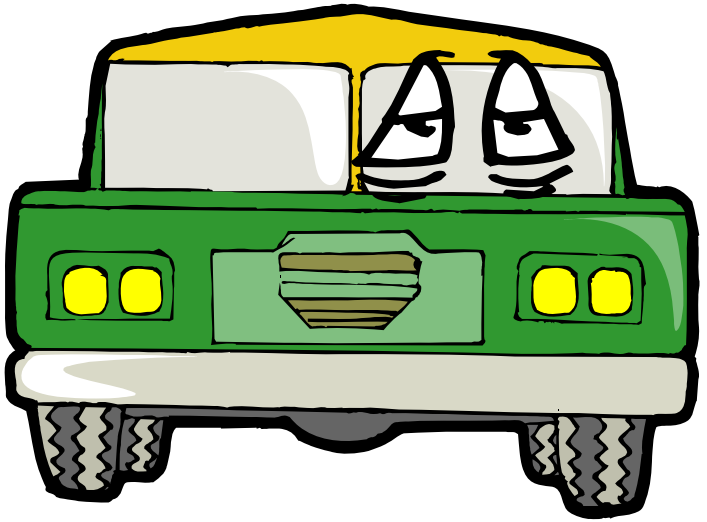
The Effect of Sleepiness on Driving

- The loss of one night's sleep can lead to extreme short-term sleepiness, while habitually restricting sleep by one or two hours a night can lead to chronic sleepiness

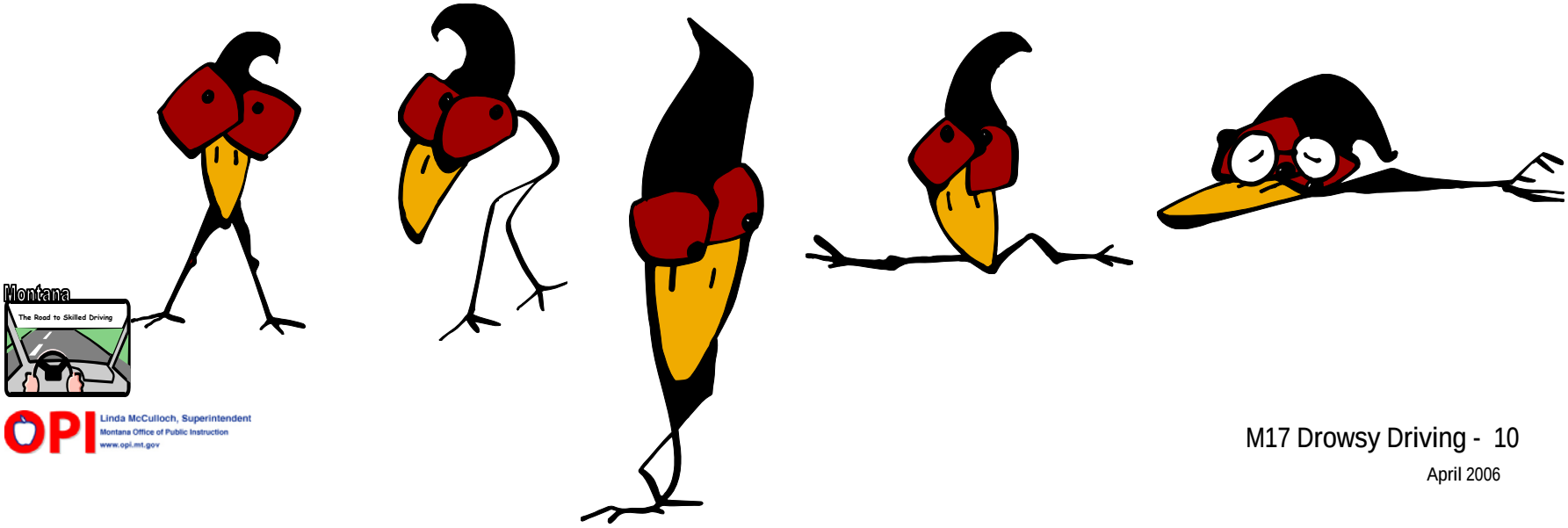
Sleep-Related Crash Characteristics

- More likely to occur at night or in mid-afternoon
- Likely to be serious
- More likely to involve a single vehicle running off the roadway
- No indication of braking or other attempts to avoid the crash
- Driver is often alone, and is especially likely to be young and male
- In addition to run-off-road crashes, sleepy drivers also are likely to be in rear-end and head-on collisions



Youthful Drivers and Drowsiness

- Youthful drivers are at the greatest risk
- Maturational changes increase the need for sleep
- Changes in sleep patterns reduce nighttime sleep or lead to circadian disruptions
- Cultural and lifestyle factors lead to insufficient sleep, especially a combination of schoolwork demands and part-time jobs, extracurricular activities, and late-night socializing



Youthful Drivers and Drowsiness

- In one study boys with the greatest extracurricular time commitments were most likely to report falling asleep at the wheel
- Those at greatest risk comprise the brightest, most energetic, hardest working teens
- Vulnerability may be further increased when youthful drivers use alcohol or other drugs because sleepy youth are likely to be unaware of the interaction of sleepiness and alcohol and may not recognize related impairments they experience

Youthful Drivers and Drowsiness

- According to sleep experts, teens need at least 8.5 – 9.25 hours of sleep each night, compared to an average of seven to nine hours each night for most adults
- Teen's internal biological clocks also keep them awake later in the evening and keep them sleeping later in the morning
- As a result, many teens come to school too sleepy to learn

Inadequate Sleep

- When we don't get adequate sleep, we accumulate a sleep debt that can be difficult to "pay back" if it becomes too big

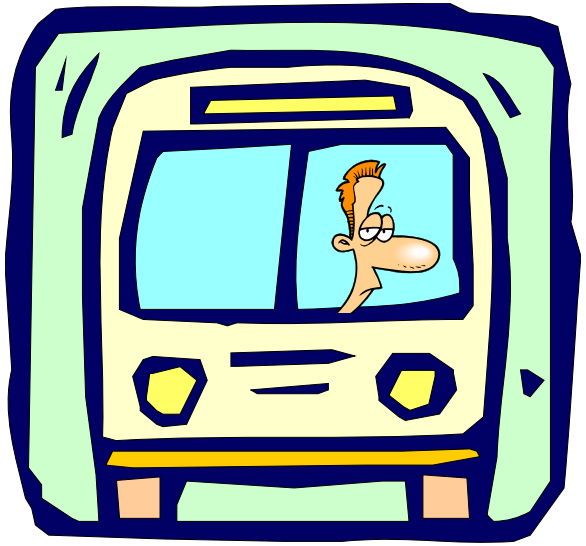
  - The resulting sleep deprivation has been linked to health problems such as obesity and high blood pressure, negative mood and behavior, decreased productivity, and safety issues in the home, on the job, and on the road

THE PHYSICAL AND MENTAL SYMPTOMS OF FATIGUE

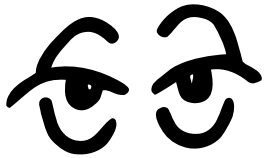
- Your eyelids feel heavy and your head starts to nod
- Yawning becomes almost constant and your vision seems blurry
- Constant rubbing of your eyes
- Trouble remembering the last few miles driven; missing exits or traffic signs
- Daydreaming, wandering, disconnected thoughts
- Trouble keeping your head up
- Drifting from your lane, tailgating, or hitting a shoulder rumble strip

THE PHYSICAL AND MENTAL SYMPTOMS OF FATIGUE

- Feeling restless and irritable
- You blink hard, focus your eyes and suddenly realize that you've veered onto the shoulder or into oncoming traffic for a moment and quickly straighten the wheel
- This time you were lucky; next time you could become the latest victim of the tragedy of drowsy driving



Are You at Risk?



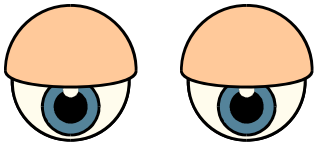
Before you drive, check to see if you are:

- Sleep-deprived or fatigued (six hours of sleep or less triples your risk)
- Been awake for more than 20 hours
- Suffering from sleep loss (insomnia), poor quality sleep, or a sleep debt
- Driving long distances without proper rest breaks
- Driving through the night, mid-afternoon or when you would normally be asleep

Are You at Risk?

Before you drive, check to see if you are:

- Taking sedating medications (antidepressants, cold tablets, antihistamines)
- Working more than 60 hours a week (increases your risk by 40%)
- Working more than one job and your main job involves shift work
- Driving alone or on a long, rural, dark or boring road



Are You at Risk?

- Drivers with any of these symptoms are at a higher risk of having a drowsy-driving crash, even when they don't feel sleepy
- Half the drivers who had drowsy-driving crashes said they felt "only slightly sleepy" or "not at all sleepy" right before the crash

Are You at Risk?

- Many people cannot tell if or when they are about to fall asleep
- If sleepiness comes on while driving, many say to themselves, “I can handle this, I’ll be fine”
- Yet they’re putting themselves and others in danger
- What they really need is a nap or a good night’s sleep

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Before “Hitting the Road”

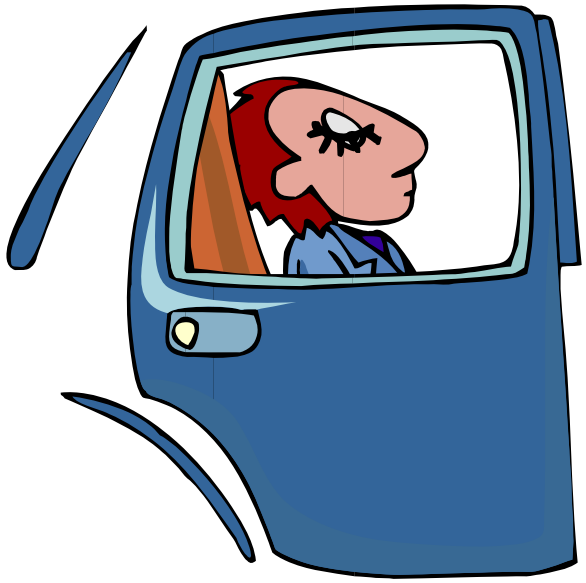
- Get adequate sleep—most adults need seven-nine hours to maintain proper alertness during the day
- Schedule proper breaks—about every 100 miles or two hours during long trips
- Arrange for a travel companion—someone to talk with and share the driving
- Avoid sedating medications—check your labels or ask your doctor

Preventative Actions for Drowsy Driving

- Watch for the warning signs of fatigue
- Stop driving - pull off at the next exit, rest area or find a place to sleep for the night
- Take a nap - find a safe place to take a 15 to 20 minute nap

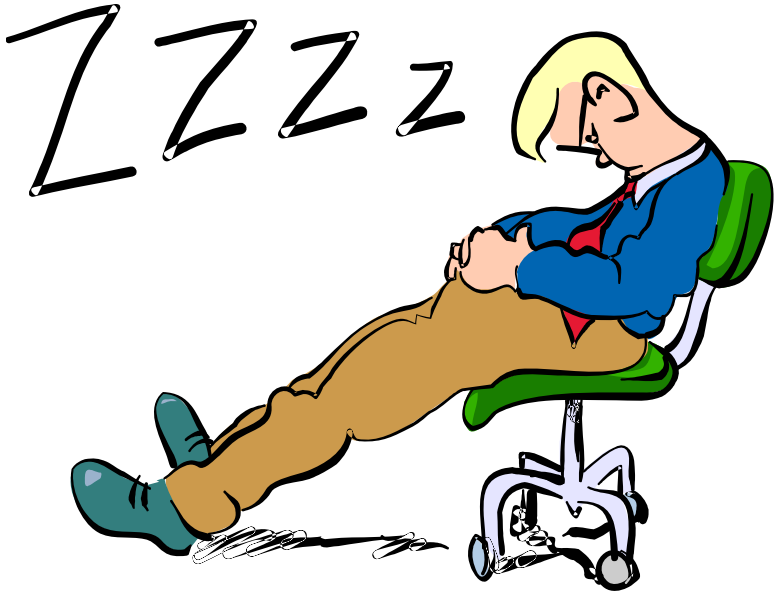
Preventative Actions for Drowsy Driving

- Consume caffeine—the equivalent of two cups of coffee can increase short-term alertness for several hours
- It takes about 30 minutes for caffeine to begin working so the best thing to do is pull over for a coffee or other caffeinated beverage, take a short nap, and then get back on the road
- Keep in mind that caffeine won't have much of an effect on people who consume it regularly



Preventative Actions for Drowsy Driving

- Keep the temperature cool in the vehicle
- Limit long distance driving – stop at least every two hours – and rest
- Keep the eyes moving and check mirrors often
- If possible, avoid driving during the peak drowsy times – from 2:00 p.m. to 5:00 p.m., and from 10:00 p.m. to 6:00 a.m.



Rumble Strips

- Rumble strips are designed to arouse sleepy drivers before they drive off the road
- People who have driven over a rumble strip in the past could personalize the risk, and even seeing the strips on the highway in the future could repeatedly remind people of the message

Rumble Strips

- Rumble strips act as an alarm clock, alerting drivers to the fact that they are too impaired to drive safely
- The key to safety is what the driver does after hearing the alarm
- Risk-reducing actions include stopping immediately if possible
- Let a more alert driver take over
- Stop in a safe location and take a 20 minute nap
- Get off the road and head for a rest stop or motel as soon as possible

Photo source: Transportation Research Board

Rumble Strips

- Rumble strips should not give drivers a false sense of security about driving while sleepy
- The strips are useful as alerting devices, but they will not protect drivers who continue to drive while drowsy
- Being awakened by driving over a rumble strip is a warning to change sleep and driving behaviors for safety
- The strips are not a technological quick fix for sleepy drivers